Focus Groups: Focus Groups Introduction

The program of NAI Focus Groups was established as a way to mobilize expertise from across the Institute and the wider scientific community towards the rapid advancement of a defined area of research, mission planning, or other activity of particular importance to astrobiology. Novel, timely, and multidisciplinary efforts achieving synergy among various research fields are particularly encouraged.

Towards its objective of influencing future space missions, and reflecting its strengths in this area, the NAI established during this past year the Astronomy Focus Group (September, 2003). The formation of this Focus Group capitalized on existing expertise and ambition in this area, as many of the founding members were instrumental in organizing the "Astrobiology and the James Webb Space Telescope (JWST)" workshop which was held earlier in 2003 at the Carnegie Institution of Washington. A white paper report was produced from this workshop making recommendations on the technical and science requirements for the JWST. Two similar workshops are being planned by the Astronomy Focus Group for the coming year, the first of which will concentrate on Atmospheric Biomarker Signatures.

Similarly, to further increase the NAI's role in planning for future space missions, the NAI also approved this past year the Astrobiotechnology Focus Group (December, 2003). Planning is already well underway by this diverse group for a major workshop dedicated to the definition of the most advanced biotechnology available for upcoming Mars exploration missions (September, 2004; CIW).

The Virus Focus Group was also renewed this past year for a three−year term. This Focus Group organized two significant activities during this past year, including a field expedition and workshop at Mono Lake and the Long Valley caldera region near Mammoth Lakes in eastern California. An important component of this expedition was to collect a variety of microbial, viral and environmental samples from this suite of unique environments which provide a diversity of habitats exhibiting extremes in temperature, pH, salinity and chemical composition. Individual investigators will examine the carbon metabolism, ecology, and community structure of the sites and conduct metagenomic studies of the viruses, as well as bacteria and archaea. Since samples are being distributed among researchers, the results of specific analyses will be able to be integrated in ways not previously possible.

These are just a few highlights of the NAI Focus Groups' accomplishments from this past year – you are invited to read more about each of the group's individual activities elsewhere in this annual report.

Astrobiotechnology

Astronomy

Early Earth

Europa

Evogenomics

Impacts

The Astrobiological Exploration of Titan Focus Group

Virus